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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/901,592	07/11/2001	William Holm	0104-0354P	7653
2292 7590 09/11/2008 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747				
EXAMINER NGUYEN, DONGHAID				
ART UNIT		PAPER NUMBER		
3729				
NOTIFICATION DATE		DELIVERY MODE		
09/11/2008		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

### Office Action Summary

**Application No.**

09/901,592

**Applicant(s)**

HOLM ET AL.

**Examiner**

DONGHAI D. NGUYEN

**Art Unit**

3729

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 June 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8, 19, 20, 31, 34 and 37-44 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8, 19, 20, 31, 34 and 37-44 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/C)
- Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

#### ***Response to Amendment***

1. The amendment filed on June 2, 2008 has been considered and made of record. Claims 1-8, 19, 20, 31, 34 and 37-44 are pending.

#### ***Specification***

2. The amendment filed on February 20, 2007 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: add-on jetting of predetermined additional amounts of viscous medium on predetermined positions on the screen printed substrate prior to hardening of the screen printed viscous medium" (in the amended abstract).

Applicant is required to cancel the new matter in the reply to this Office Action.

#### ***Claim Objections***

3. Claims 41 is objected to because of the following informalities: "viscous medium" (last two lines) should be: --solder paste--. Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 8, 19, 20, 31, 34, 39 and 43 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 5,639,010 to Todd et al.

Regarding claim 1, Todd et al disclose a method of applying viscous medium on a substrate, said method comprising the steps of: providing a substrate (having electrodes 16) arranged for mounting of electronic components (20) thereon; screen printing (step 32, see Fig. 2) predetermined amounts of a viscous medium (solder) on predetermined positions on the substrate (see Col. 3, lines 1-5); and add-on jetting (step 34) of predetermined additional amounts of viscous medium (18) on predetermined positions on the screen printed substrate (see Fig. 1), wherein the add-on jetting is non-contact dispensing and the add-on jetting viscous medium is still in viscous form during the add-on jetting (see Col. 3, lines 13-17).

Regarding claim 8, Todd et al disclose the viscous medium (18, adhesive) through said add-on jetting which is different from the viscous medium applied through screen printing (solder).

Regarding claims 31 and 34, Todd et al disclose jetting individual droplets of viscous medium (18) are of a predetermined volume (see Fig. 1) at said predetermined positions on the screen printed substrate (see Col. 3, lines 13-17).

Regarding claim 19, Todd disclose a method of applying viscous medium on a substrate, said method comprising the steps of: providing the substrate (12) arranged for mounting of electronic components (20) thereon; screen printing (step 32, see Fig. 2) a viscous medium (solder) onto the substrate (see Col. 3, lines 1-5); and jetting (step 34) additional viscous medium (18.) onto the substrate (see Fig. 1), wherein the add-on jetting viscous medium is non-contact

dispensing and the add-on jetting viscous medium is still in viscous form during the add-on jetting (see Col. 3, lines 13-17).

Regarding claim 20, Todd et al disclose a method of applying additional viscous medium on a substrate (12) that has been screen printed (see Col. 3, lines 1-5) with viscous medium (solder), said method comprising the step of: providing the substrate (having solder pads 16) arranged for mounting of electronic components (20) thereon; and jetting (see step 34 in Fig. 2) additional viscous medium (18) onto the substrate (see Fig. 1), wherein the jetting additional viscous medium is non-contact dispensing and the add-on jetting viscous medium is still in viscous form during the add-on jetting (see Col. 3, lines 13-17).

Regarding claim 39, Todd et al disclose a method of applying viscous medium on a substrate, said method comprising the steps of: providing a substrate (having solder pads 16) arranged for mounting of electronic components (20) thereon; screen printing (see Col. 3, lines 1-5) predetermined amounts of a viscous medium (solder) on predetermined positions on the substrate; and add-on jetting (see step 34 in Fig. 2) of individual droplets of viscous medium (18) on predetermined positions on the screen printed substrate (see Fig. 1), wherein the add-on jetting is non-contact dispensing and the add-on jetting viscous medium is still in viscous form during the add-on jetting (see Col. 3, lines 13-17).

Regarding claim 43, Todd et al disclose mounting electronic components (20) on the substrate (see Fig. 1).

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-8, 19, 20, 31, 34 and 37-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5,638,597 to Cutting et al in view of JP Patent Publication Number 2-200,367 to Osamu.

Regarding claims 1, 19, 20, 39 and 41, Cutting et al disclose a method of applying viscous medium on a substrate, said method comprising the steps of: providing a substrate (see Fig. 7) arranged for mounting of electronic components (410) thereon; screen printing (see Col. 4, lines 52-55) predetermined amounts of a viscous medium (solder) on predetermined positions (solder pads 402, 404, etc.) on the substrate; and add-on additional amount of solder to the screen printed viscous medium if necessary (see Col. 5, lines 15-17). Cutting et al do not disclose a specific method of adding additional viscous medium such as add-on jetting, wherein the add-on jetting is non-contact dispensing. Osamu teaches the step of add-on additional viscous medium (solder) onto the positions of the viscous medium provided on the substrate by non-contact dispensing (see Fig. 1 and Constitution of the Abstract) for improving working efficiency and obtaining full automation (see Purpose in the Abstract). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Cutting et al by utilized the add-on jetting additional solder on to the solder provided on the

substrate as taught by Osamu for improving working efficiency and obtaining full automation process of applying viscous medium on the substrate.

The limitations of claims 19, 20, 39, 41 and 44 also met as set forth above.

Regarding claims 2-7, 31 and 34, Osamu teaches the inspecting the results of solder applied on the substrate and correcting solder by jetting individual droplets of additional solder to the board or removing solder from the substrate (see Fig. 1 and Constitution of the Abstract) for improving working efficiency and obtaining full automation (see Purpose in the Abstract). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Cutting et al by utilized the inspecting and add-on jetting additional solder on to the solder provided on the substrate as taught by Osamu for improving working efficiency and obtaining full automation process of applying viscous medium on the substrate.

Regarding claims 37, 38, 40 and 42, both Cutting et al and Osamu disclose the additional viscous medium is solder paste and same as the viscous medium disclose through screen printing (Cutting et al Col. 5, lines 17)

Regarding claim 43, Cutting et al disclose mounting electronic components (410) on the substrate (see Figs. 7 and 14)

Regarding claim 8, Cutting/Osamu does not disclose the viscous medium through said add-on jetting is different from the viscous medium applied through screen printing. It would have been an obvious matter of design choice to one having ordinary skill in the art at the time the invention was made to choose any desired viscous medium through said add-on jetting which is different from the viscous medium applied through screen printing, since Applicants have not

disclosed the specific viscous medium in the screen printing and jet printing, solves any stated problem or is for any particular purpose and it appears the invention would perform equally well with the viscous medium disclosed by Cutting/Osamu.

### ***Response to Arguments***

8. Applicant's arguments with respect to claims 1-8, 19, 20, 31, 34 and 37-44 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.



Any inquiry concerning this communication or earlier communications from the examiner should be directed to DONGHAI D. NGUYEN whose telephone number is (571)272-4566. The examiner can normally be reached on Monday-Friday (9:00-6:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter D. Vo can be reached on (571)-272-4690. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DN  
September 4, 2008

/Donghai D. Nguyen/  
Primary Examiner, Art Unit 3729